

3
selected from thioxanthone, 1-chlorothioxanthone, 2-chlorothioxanthone, 3-chlorothioxanthone, 4-chlorothioxanthone, 1-methylthioxanthone, 2-methylthioxanthone, 3-methylthioxanthone, 4-methylthioxanthone, 1-ethylthioxanthone, 2-ethylthioxanthone, 3-ethylthioxanthone, 4-ethylthioxanthone, 1-isopropylthioxanthone, 2-isopropylthioxanthone, 3-isopropylthioxanthone, 4-isopropylthioxanthone, methyl thioxanthone-1-carboxylate or methyl 7-methylthioxanthone-3-carboxylate.

9. The article of claim 1, wherein in the positive resist composition the amount of the thioxanthone compound is from about 0.01 to about 5 parts by weight based on 100 parts by total weight of the novolac resin and a low molecular weight alkali-soluble phenol compound.--

REMARKS

Claim Rejections - 35 USC § 103

Claims 1-5 are rejected as being obvious over Tachikawa et al. (U.S. 4,356,255). Claims 2-5 have been cancelled, claim 1 has been amended and claims 6-9 have been added. Claims 1, and 6-9 are

pending. Applicants respectfully traverse this rejection. Tachikawa et al. fails to teach or suggest an article made from a silicon wafer comprising a positive resist composition containing a novolac resin and a radiation-sensitive quinonediazide compound as recited in present claim 1.

Tachikawa et al. fails to teach or suggest a silicon wafer coated with the recited positive resist composition.

The Examiner is respectfully requested to enter this Reply After Final in that it raises no new issues. Alternatively, the Examiner is respectfully requested to enter this Reply After Final in that it places the application into condition for allowance or in better form for Appeal.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Christina Annick (Reg. No. 46,428) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

Appl. No. 09/323,230
Response filed on April 16, 2001

overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By *Andrew D. Meikle* #36,623
Andrew D. Meikle, #32,868

ADM/CFA
2185-0343P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph beginning on page 9, line 2, has been amended as follows:

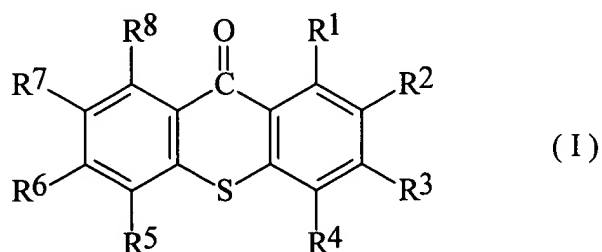
The positive resist composition of the present invention comprises the novolac resin described above, quinonediazide compound and the thioxanthone compound as the essential ingredients. In addition, the positive resist composition of the present invention may comprise a resin other than the novolac resin, as well as a small amount of various additives conventional in this field, such as a dye, a surfactant and the like, as required. In addition, it is also effective to [compeise] utilize a compound degradable by alkali, such as an acid generating agent, proposed in JP-A-10-213905, which generates an acid by the action of an alkali-developing solution. Addition of the alkali-degradable compound may contribute to the improvement of pattern profile.

In the Claims:

Claim 1 has been amended as follows:

1. (Amended) [A] An article comprising a substrate comprising a silicon wafer and a positive resist composition [which comprises] comprising a novolac resin, a radiation-sensitive quinonediazide compound and a thioxanthone compound represented by the following formula

(I):



wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸ independently represent hydrogen, halogen, alkyl, alkoxy, aryl, carboxyl or alkoxycarbonyl
wherein the positive resist composition is coated on the surface of the silicon wafer.

Claims 2-5 have been cancelled.

Claims 6-9 have been added.